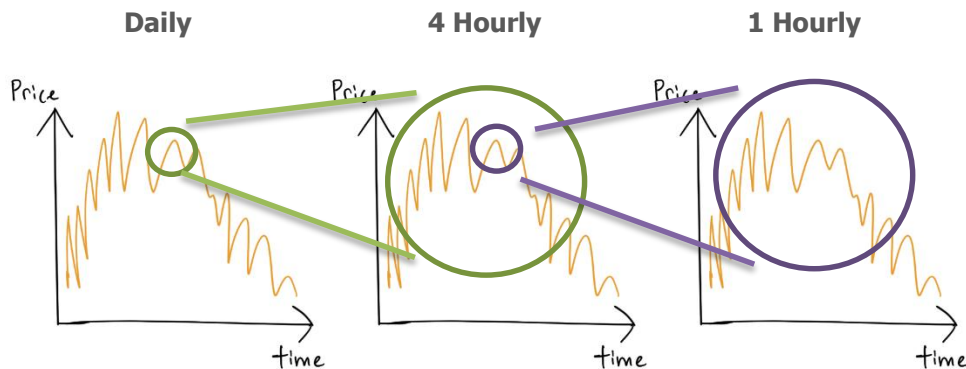


Fractals: Timeframe Robustness (No we are NOT talking about the candlestick pattern)

Official Definition of Fractals: A fractal is a natural phenomenon or a mathematical set that exhibits a repeating pattern that displays at every scale. If the replication is exactly the same at every scale, it is called a self-similar pattern.¹

In English: A pattern that repeat itself in different visual or time scale.

Visual Look at Fractals



As we zoom into the lower timeframes, we see that the shapes (characteristic) of the asset remains the same. This means that our robot should be timeframe robust.

How can we apply this knowledge?

If the asset behaves in a fractal manner, the robot should perform similarly across different timeframes. However, this does not mean that we are indifferent to the timeframe we trade.

We should trade on lower timeframe for fractal assets. This will maximise the number of trading opportunities per time. Imagine if you average 1 trade per 5 bars. If you trade on Daily timeframe, you will fire 52 trades a year ($260 \text{ weekdays} / 5$). If you trade on 1 Hourly timeframe, you can fire 1248 ($260 * 24 / 5$) trades a year. Hence, your profit will be 24 times higher (WITHOUT EVEN CONSIDERING COMPOUNDING EFFECT!)

Should we trade on the lowest possible timeframe?

Following the logic stated above, if we should trade on the lowest possible timeframe (1min for MT4), we should be massively profitable right? Sadly and unsurprisingly, no.

It is unlikely for an asset to behave in a perfect fractal manner. As we go to lower timeframes, the noise (volatility) increases. The asset behaves in a more unpredictable manner due to real-time influences from current events, market microstructure and speculation by market participants.

This means we should choose a timeframe that balances noise reduction and profit maximisation. A good rule of thumb will be the 30min, 1hr and 4hr timeframes. Note that this is just a guideline, you will need to consider the nature of your strategy when choosing an appropriate timeframe. For example, if you are trading an inefficiency that exists within the hour, you definitely can't trade on H1 or larger.

¹ <http://en.wikipedia.org/wiki/Fractal>